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PTO/SB/21 (08-00)

Approved for use through 10/31/2002, OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<h2 style="margin: 0;">TRANSMITTAL FORM</h2> <p style="margin: 0;">(to be used for all correspondence after initial filing)</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Application Number</td> <td style="padding: 2px;">10/519,128</td> </tr> <tr> <td style="padding: 2px;">Filing Date</td> <td style="padding: 2px;">Not yet assigned</td> </tr> <tr> <td style="padding: 2px;">First Named Inventor</td> <td style="padding: 2px;">LEE, RANDALL J.</td> </tr> <tr> <td style="padding: 2px;">Group Art Unit</td> <td style="padding: 2px;">Not yet assigned</td> </tr> <tr> <td style="padding: 2px;">Examiner Name</td> <td style="padding: 2px;">Unassigned</td> </tr> <tr> <td style="padding: 2px;">Attorney Docket Number</td> <td style="padding: 2px;">UCAL-253US1</td> </tr> </table>	Application Number	10/519,128	Filing Date	Not yet assigned	First Named Inventor	LEE, RANDALL J.	Group Art Unit	Not yet assigned	Examiner Name	Unassigned	Attorney Docket Number	UCAL-253US1
Application Number	10/519,128													
Filing Date	Not yet assigned													
First Named Inventor	LEE, RANDALL J.													
Group Art Unit	Not yet assigned													
Examiner Name	Unassigned													
Attorney Docket Number	UCAL-253US1													
Total Number of Pages in This Submission    20														
<b>ENCLOSURES (check all that apply)</b>														
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Documents <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input checked="" type="checkbox"/> Copy of Communication from Patent Office on 5/23/05 <input checked="" type="checkbox"/> Response to Communication <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Transmittal, Application Information Sheet, Petition to Revoke, Preliminary Amend, copy of first page of published PCT appln. WO 03/094697, copy of the return postcard date stamped by the Patent Office on 12/22/04 & express mail label (16 pgs.)												
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>														
<div style="border: 1px solid black; padding: 5px; display: inline-block; font-weight: bold; font-size: 1.2em;">RECEIVED</div>														
<b>SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT</b>														
Firm or Individual Name	CAROL L. FRANCIS, Reg. No. 36,513													
Signature														
Date	May 31, 2005													
Legal Staff International Division														

<b>CERTIFICATE OF FACSIMILE TRANSMISSION</b>			
I hereby certify that this correspondence is being facsimile filed under 37 C.F.R. §§ 1.6(d) and 1.8(a)(1)(b) addressed to: (571) 273-0459 on this date: May 31, 2005.			
Typed or printed name	Martha Cisneros		
Signature		Date	May 31, 2005

Burden Hour Statement: This form is estimated to take .2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450 Alexandria VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: P.O. Box 1450 Alexandria VA 22313-1450.

**BEST AVAILABLE COPY**

VIA FACSIMILE (571) 273-0459

**RESPONSE TO  
COMMUNICATION**

Address to:  
Mail Stop NO FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Customer Number	24353
Atty. Docket No.	UCAL-253US1
Application Number	10/519,128
Int'l Appl. No.	PCT/US03/14304
Int'l Filing Date	May 7, 2003
First Named Inventor	LEE, RANDALL J.
Examiner Name	N/A
Group Art Unit	N/A

Sir:

In response to our Status Inquiry of April 27, 2005, the Patent Office sent a Communication dated May 23, 2005 indicating that the **Petition to Revive an Application Abandoned Unintentionally**, we filed on **December 22, 2004**, had not yet reached the Office of PCT Legal Administration. The Communication strongly suggested that a copy of the petition be faxed to the Office of PCT Legal Administration to the number above.

Accordingly, with this response we enclose copies of the following as filed with the U.S. Patent and Trademark Office On December 22, 2004::

- 1) Transmittal (4 pages)
- 2) Application Information Sheet (2 pages)
- 3) Petition to Revive an Application Abandoned Unintentionally (1 page)
- 4) Preliminary Amendment (6 pages)
- 5) the first page of PCT international application serial no. PCT/US03/14304, filed May 7, 2003, and published as PCT application WO 03/094697

We also enclose:

- 6) a copy of the return postcard date stamped by the Patent Office on December 22, 2004 and noting the Express Mail label no., which returned postcard acknowledges receipt of the documents filed on December 22, 2004, and assigned the application U.S. application serial no. 10/519,128
- 7) a copy of the Communication dated May 23, 2005

Atty Dkt. No.: UCAL-253US1

USSN: 10/519,128

Applicants respectfully request consideration of the Petition and further request to be informed of the current status of the petition filed for this application.

Respectfully submitted,  
BOZICEVIC, FIELD & FRANCIS LLP

Date: May 31, 2005

By: Carol L. Francis  
Carol L. Francis  
Registration No. 36,513

BOZICEVIC, FIELD & FRANCIS LLP  
1900 University Avenue, Suite 200  
East Palo Alto, California 94303  
Telephone: (650) 327-3400  
Facsimile: (650) 327-3231

<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>		<b>ATTORNEY'S DOCKET NUMBER UCAL-253US1</b>
<b>INTERNATIONAL APPLICATION NO. US03/14304</b>	<b>INTERNATIONAL FILING DATE 5/7/2003</b>	<b>PRIORITY DATE CLAIMED May 8, 2002</b>
<b>TITLE OF INVENTION METHODS AND COMPOSITIONS FOR CORRECTION OF CARDIAC CONDUCTION DISTURBANCES</b>		
<b>APPLICANT(S) FOR DO/EO/US LEE, RANDALL J.</b>		

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

- ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
- ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
- ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
- ☒ The US has been elected (Article 31).
- ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
  - ☐ is attached hereto (required only if not communicated by the International Bureau).
  - ☐ has been communicated by the International Bureau.
  - ☒ is not required, as the application was filed in the United States Receiving Office(RO/US).
- ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
  - ☐ is attached hereto.
  - ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
- ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
  - ☐ are attached hereto (required only if not communicated by the International Bureau).
  - ☐ have been communicated by the International Bureau.
  - ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - ☒ have not been made and will not be made.
- ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
- ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
- ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

- ☐ An Information Disclosure Statement under 37 CFR 1.87 and 1.88.
- ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
- ☒ A preliminary amendment.
- ☒ An Application Data Sheet under 37 CFR 1.76.
- ☐ A substitute specification.
- ☐ A power of attorney and/or address letter.
- ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
- ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
- ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
- ☒ Other items or information: **Petition to Revive an Application Abandoned Unintentionally and Postcard**

EV521025182U

COPY

①12/22/04

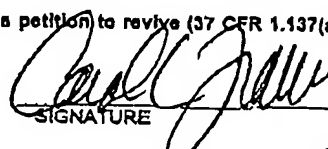
This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO-1390 (Rev. 10-2004)

Approved for use through 3/31/2007. OMB 0851-0021

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO. <b>US03/14304</b>		ATTORNEY'S DOCKET NUMBER <b>UCAL-253US1</b>		
21. <input checked="" type="checkbox"/> The following fees are submitted:  <b>BASIC NATIONAL FEE (37 CFR 1.492(a) (1) - (5)):</b>  Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... <b>\$1110.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$950.00</b>  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$790.00</b>  International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$750.00</b>  International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$100.00</b>				<b>CALCULATIONS PTO USE ONLY</b>		
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>\$ 750.00</b>		
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$		
<b>CLAIMS</b>	<b>NUMBER FILED</b>	<b>NUMBER EXTRA</b>	<b>RATE</b>	\$		
Total Claims	12 - 20 =		x \$18.00	\$		
Independent Claims	4 - 3 =	1	x \$88.00	<b>\$ 88.00</b>		
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			+ \$300.00	\$		
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$		
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$		
<b>SUBTOTAL =</b>				\$		
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$		
<b>TOTAL NATIONAL FEE =</b>				\$		
Petition to Revive an Application Abandoned Unintentionally Under 37 C.F.R. '1.137(b)+				<b>\$ 1,500.00</b>		
<b>TOTAL FEES ENCLOSED =</b>				\$		
				Amount to be refunded:	\$	
				Amount to be charged:	<b>\$2,338.00</b>	
a. <input type="checkbox"/> A check in the amount of \$_____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>50-0815</u> in the amount of <b>\$2,338.00</b> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>50-0815</u> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.						
<b>NOTE:</b> Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status. <b>SEND ALL CORRESPONDENCE TO:</b>  <b>Bozicevic, Field &amp; Francis, LLP</b> <b>1900 University Avenue, Suite 200</b> <b>East Palo Alto, California</b> <b>94303</b>						
				 SIGNATURE		
				<b>Carol L. Francis</b> NAME	<b>12/22/2004</b> DATE	
				<b>36,513</b> REGISTRATION NUMBER		

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<b>TITLE OF INVENTION METHODS AND COMPOSITIONS FOR CORRECTION OF CARDIAC CONDUCTION DISTURBANCES</b>		<b>PRIORITY DATE CLAIMED May 8, 2002</b>
<b>APPLICANT(S) FOR DO/EO/US LEE, RANDALL J.</b>		

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- ☒ Other items or information: **Petition to Revive an Application Abandoned Unintentionally and Postcard**

COPY

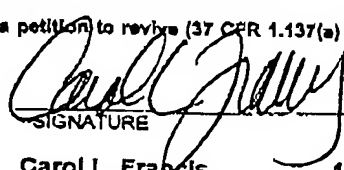
This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO-1390 (Rev. 10-2004)

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U.S. APPLICATION NO. (If known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO. <b>US03/14304</b>		ATTORNEY'S DOCKET NUMBER <b>UCAL-253US1</b>	
21. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS PTO USE ONLY	
<b>BASIC NATIONAL FEE (37 CFR 1.492(a) (1) - (5)):</b> Neither International preliminary examination fee (37 CFR 1.482) nor International search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... <b>\$1110.00</b> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... <b>\$950.00</b> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... <b>\$790.00</b> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... <b>\$750.00</b> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... <b>\$100.00</b>					
ENTER APPROPRIATE BASIC FEE AMOUNT =				<b>\$ 750.00</b>	
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				<b>\$</b>	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	<b>\$</b>	
Total Claims	<b>12 - 20 =</b>		<b>x \$18.00</b>	<b>\$</b>	
Independent Claims	<b>4 - 3 =</b>	<b>1</b>	<b>x \$88.00</b>	<b>\$ 88.00</b>	
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			<b>+ \$300.00</b>	<b>\$</b>	
TOTAL OF ABOVE CALCULATIONS =				<b>\$</b>	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				<b>\$</b>	
SUBTOTAL =				<b>\$</b>	
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				<b>\$</b>	
TOTAL NATIONAL FEE =				<b>\$</b>	
Petition to Revive an Application Abandoned Unintentionally Under 37 C.F.R. 1.137(b)+				<b>\$ 1,500.00</b>	
TOTAL FEES ENCLOSED =				<b>\$</b>	
				Amount to be refunded:	<b>\$</b>
				Amount to be charged:	<b>\$2,338.00</b>
a. <input type="checkbox"/> A check in the amount of \$_____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>60-0815</u> in the amount of <u>\$2,338.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>60-0815</u> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:					
Bozicevic, Field & Francis, LLP 1900 University Avenue, Suite 200 East Palo Alto, California 94303			 SIGNATURE <b>Carol L. Francis</b> NAME <b>12/22/2004</b> REGISTRATION NUMBER <b>36,513</b>		

**APPLICATION INFORMATION**

Application Type::  
Title::

Utility Application  
METHODS AND COMPOSITIONS  
FOR CORRECTION OF CARDIAC  
CONDUCTION DISTURBANCES  
UCAL-253US1

Attorney Docket Number::  
Request for Non-Publication?::  
Assignee for Publication::  
Total Drawing Sheets::  
Small Entity?::  
License US Govt. Agency::  
Contract or Grant Numbers::  
Sequence Submission?::  
Computer Readable Form (CRF)?::

7  
Large  
No  
  
No

**COPY**

**INVENTOR INFORMATION**

Inventor One Given Name::  
Family Name::  
Postal Address Line One::

RANDALL J.  
LEE  
University of California , Cardiac  
Electrophysiology, Room MU429  
500 Parnasus Avenue  
San Francisco  
California  
94143  
USA

Postal Address Line Two::  
City::  
State or Province::  
Postal or Zip Code::  
Citizenship Country::

**CORRESPONDENCE INFORMATION**

Correspondence Customer Number::  
Telephone One::  
Telephone Two::  
Fax::  
Electronic Mail::

24353  
(650) 327-3400  
(650) 833-7713  
(650) 327-3231  
francis@bozpat.com

**REPRESENTATIVE INFORMATION**

Representative Customer Number:: 24353



**CONTINUITY INFORMATION**

This application is a::  
> Application One::

371 National Phase Application of...  
PCT/US03/14304 (Published as WO  
03/094697)  
May 7, 2003

Filing Date::

Which claims priority::  
Filing Date::  
and

60/379,140  
May 8, 2002

Claims priority::  
Filing Date::

10/291,202  
November 7, 2002

Claims priority::  
Filing Date::

PCT/US02/35932  
November 7, 2002

## EXPRESS MAIL NO. EV 521025182 US

<b>Petition to Revive an Application Abandoned Unintentionally Under 37 C.F.R. §1.137(b)</b>  Address to: Mail Stop: PCT Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Attorney Docket	UCAL-253US1
	First Named Inventor	Lee, Randall J.
	Int'l Appl. No.	PCT/US03/14304
	Int'l Filing Date	May 7, 2003
	Group Art Unit	N/A
	Examiner Name	N/A
	Title	METHODS AND COMPOSITIONS FOR CORRECTION OF CARDIAC CONDUCTION DISTURBANCES

COPY

Sir:

Applicants hereby petition under 37 CFR § 1.137(b) to revive the above application, which was abandoned as of November 9, 2004 for failure to enter the National Phase under 35 U.S.C. §371 within 30 months of the earliest priority date of PCT/US03/14304.

As required by 37 C.F.R. § 1.137(b)(1), this petition is filed with an application which claims priority to the above-referenced application under 35 U.S.C. §371.

Statement. The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 C.F.R. 1.137(b) was unintentional. Specifically, the entire delay in filing a U.S. National Phase application from the 30 month due date of November 8, 2004 until the filing of the present petition was unintentional. (37 C.F.R. § 1.137(b)(3)).

No Terminal Disclaimer is required since the subject application was filed on or after June 8, 1995. (37 C.F.R. § 1.137(b)(4)).

The Commissioner is authorized to charge the large entity petition fee of \$1,500.00 as set forth in 37 C.F.R. § 1.17(m), and charge any shortages of fees or credit any overages, to Deposit Account No. 50-0815 (37 C.F.R. § 1.137(b)(2)).

Date: Dec 22, 2004

Respectfully submitted,  
BOZICEVIC, FIELD & FRANCIS LLP  
By: Carol L. Francis  
Carol L. Francis  
Registration No. 36,513

BOZICEVIC, FIELD & FRANCIS LLP  
1900 University Avenue, Suite 200  
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<b>PRELIMINARY AMENDMENT Under CFR 1.115</b>  Address to: Mail Stop Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Attorney Docket No.	UCAL-253US1
	Confirmation No.	Not yet assigned
	First Named Inventor	LEE, RANDALL J.
	Application Number	Not yet assigned
	Filing Date	Not yet assigned
	Group Art Unit	Not yet assigned
	Examiner Name	Not yet assigned
	Title:	"METHODS AND COMPOSITIONS FOR CORRECTION OF CARDIAC CONDUCTION DISTURBANCES"

Sir:

Prior to the examination of the above-referenced application on the merits, please enter the amendments below.

Atty Dkt. No.: UCAL-253US1  
USSN: Not yet assigned

AMENDMENTS TO THE SPECIFICATION

After the last page of the claims on page 41, insert as separately number page 42 the following abstract:

METHODS AND COMPOSITIONS FOR CORRECTION OF  
CARDIAC CONDUCTION DISTURBANCES

The invention provides methods for establishing electrical coupling between cardiomyocytes and recombinant cells which have been genetically engineered to express a connexin protein such as connexin 43 (Cx43) protein. The invention is based on the discovery that genetic modification of skeletal muscle cells to express a recombinant connexin, enables the genetically modified cells to establish electrocommunication with cardiac cells via gap junctions. The recombinant connexin-expressing cells can be used for repair of cardiac tissue and for treatment of cardiac disease by transplantation into cardiac tissue.

Atty Dkt. No.: UCAL-253US1  
USSN: Not yet assigned

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of establishing an electrical connection between a recombinant mammalian cell and a myocardial cell, the method comprising:

contacting a myocardial cell with a recombinant ~~mammalian~~ **fibroblast** cell genetically modified to produce a connexin protein, said contacting being in a manner sufficient to provide for production of an electrical connection between the myocardial cell and the recombinant cell;

wherein an electrical connection between the recombinant cell and the myocardial cell is established.

2. - 5. (Canceled)

6. (Original) The method of claim 1, wherein the connexin protein is a connexin 43 protein.

7. (Currently Amended) ~~A~~ The method of claim 1, wherein said contacting comprises implanting the recombinant cell into myocardial tissue of a subject.

8. (Currently Amended) The method of claim 1, wherein after the electrical connection between the recombinant cell and the myocardial cell is established, the recombinant cell exhibits ~~has similar~~ conductive characteristics similar to that of the myocardial cell.

9. - 12. (Canceled)

Atty Dkt. No.: UCAL-253US1  
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13. **(Currently Amended)** A method of establishing an electrical connection between a recombinant ~~skeletal-muscle~~ fibroblast cell and a myocardial cell, the method comprising:

contacting a myocardial cell with a recombinant ~~skeletal-myoblast~~ fibroblast cell genetically modified to express a recombinant connexin 43 protein, said contacting being in a manner sufficient to provide for production of an electrical connection between the myocardial cell and the recombinant ~~skeletal-myoblast~~ fibroblast cell;

wherein an electrical connection between the recombinant ~~skeletal-myoblast~~ fibroblast cell and the myocardial cell is established so that the recombinant ~~skeletal-myoblast~~ fibroblast cell has ~~similar~~ conductive characteristics ~~as the~~ of the myocardial cell.

14. **(Currently Amended)** A method for treating a cardiac conduction disturbance in a host, the method comprising:

introducing into cardiac tissue of a host a therapeutically effective amount of a recombinant ~~mammalian~~ fibroblast cell, which recombinant cell is genetically modified to express a connexin protein, said introducing being effective to establish an electrical connection between the recombinant cell and a myocardial cell of the host cardiac tissue;

wherein the cardiac conduction disturbance in the host is treated.

15. -- 18. **(Canceled)**

19. (Original) The method of claim 14, wherein the connexin protein is a connexin 43 protein.

20. (Original) The method of claim 14, wherein said introducing comprises implanting the recombinant cell into an infarct region of the cardiac tissue.

21. (Original) The method of claim 14, wherein the recombinant cell is autologous to the host.

22. **(Currently Amended)** A method for treating a cardiac conduction disturbance in a mammalian host, the method comprising:

introducing into cardiac tissue of the host a therapeutically effective amount of a recombinant fibroblast ~~skeletal-muscle~~ cell genetically modified to express a connexin 43 protein, said introducing

Atty Dkt. No.: UCAL-253US1  
USSN: Not yet assigned

being effective to establish an electrical connection between the introduced recombinant ~~skeletal muscle~~  
fibroblast cell and a myocardial cell of the host cardiac tissue;  
wherein the cardiac conduction disturbance is treated.

23. – 24. (Canceled)

25. (Original) The method of claim 22, wherein said introducing comprises implanting the recombinant cell into an infarct region of the cardiac tissue,

26. (Currently Amended) The method of claim 22, wherein the recombinant ~~skeletal muscle~~  
fibroblast cell is autologous to the host.

Atty Dkt. No.: UCAL-253US1  
USSN: Not yet assigned

**REMARKS UNDER 37 CFR § 1.111**

**Formal Matters**

Claims 1, 6-8, 13, 14, 19-22, and 25- 26 are pending after entry of the amendments above.

Claims 2-5, 9-12, 15-16, and 21-24 are canceled without prejudice.

Claims 1, 7, 8, 13, 14, 22 and 26 are amended. Support for these amendments is found in the specification and claims as originally filed.

The specification is amended to insert an abstract. Support for the abstract is found in the specification at page 3, line 31 to page 4, line 6.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

**Conclusion**

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number UCAL-253US1.

Respectfully submitted,  
BOZICEVIC, FIELD & FRANCIS LLP

Date: Dec 22, 2004

By:

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Registration No. 36,513

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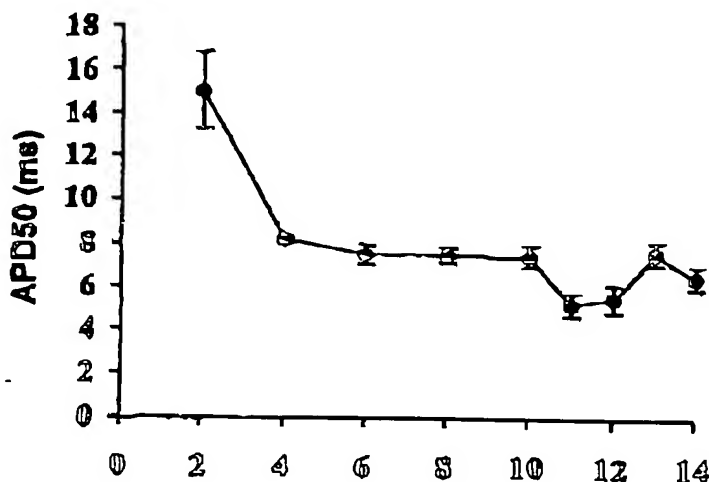
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- (71) Applicant (for all designated States except US): THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 1111 Franklin Street, 12th Floor, Oakland, CA 94604-5200 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): LEE, Randall, J. [US/US]; University of California, Cardiac Electrophysiology, Rm. MU429, 500 Parnassus Avenue, San Francisco, CA 94143 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
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(54) Title: METHODS AND COMPOSITIONS FOR CORRECTION OF CARDIAC CONDUCTION DISTURBANCES



(57) Abstract: The invention provides methods for establishing electrical coupling between cardiomyocytes and recombinant cells which have been genetically engineered to express a gap junction protein, e.g., a connexin protein such as connexin 43 (Cx43) protein. The invention is based on the discovery that genetic modification of skeletal muscle cells to express a recombinant connexin, enables the genetically modified cells to establish electrocommunication with cardiac cells via gap junctions. The recombinant connexin-expressing cells can be used for repair of cardiac tissue and for treatment of cardiac disease by transplantation into cardiac tissue.

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Date Mailed: December 22, 2004

Application No.:

Filing Date: Herewith (12.22.04)

Inventor(s): LEE, RANDALL J.

Title: "METHODS AND COMPOSITIONS FOR CORRECTION OF  
CARDIAC CONDUCTION DISTURBANCES"

Enclosure(s):

- ❖ 371 Transmittal Des/Elect offices in duplicate (4 pgs.)
- ❖ Application Information (2 pgs.)
- ❖ Petition to Revive an Application Abandoned  
Unintentionally Under 37 C.F.R. '1.137(b) (1 pg.)
- ❖ Preliminary Amendment (6 pgs.)
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Date Mailed: December 22, 2004

Application No.:

Filing Date: Herewith (12.22.04)

Inventor(s): LEE, RANDALL J.

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DT03 Rec'd PCT/PTO 22 DEC 2004

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Carol L. Francis  
Bozicevic, Field & Francis LLP  
1900 University Avenue, Ste. 200  
East Palo Alto, CA 94303

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Dear Ms. Francis:

This is in response to your letter received 27 April 2005, inquiring about the status of U.S. Serial No. 10/519,128 as it relates to a "Petition to Revive an Application Abandoned Unintentionally" filed 22 December 2004. The petition in question has not yet reach the Office of PCT Legal Administration. To help expedite matters I would strongly suggest that you fax said petition addressed to the Office of PCT Legal Administration at (571) 273-0459. Please include proof of initial filing of petition, and a statement that second submission is a true copy of initial filing.

Wanda Banks  
Paralegal Specialist  
Office of PCT Legal Administration  
Tel: (571)272-3277

WGB/wgb

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